

## Adaptive Distributed Environment for Procedure Training, Phase I

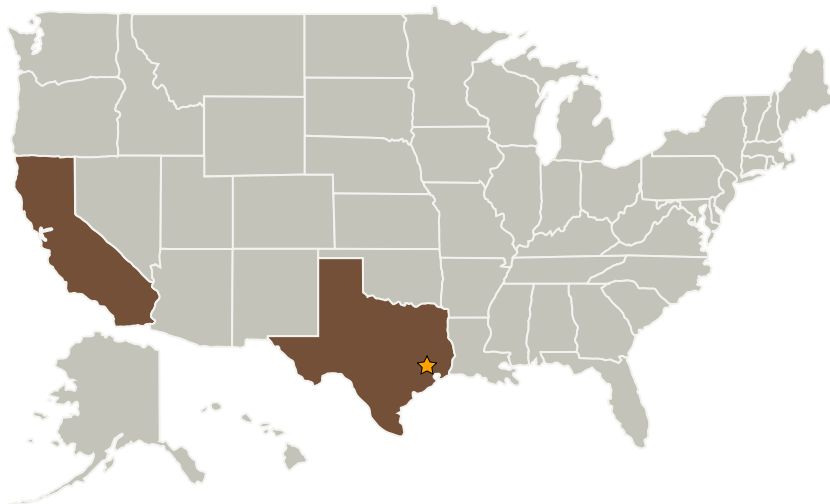
Completed Technology Project (2005 - 2005)



## Project Introduction

With its constantly evolving portfolio of highly technical systems requiring human construction maintenance and operation, NASA has an extreme form of a common yet challenging training problem: how to ensure that personnel are qualified on the (often changing) procedures required to work on or with these systems. Simulation-based training that enables learning while doing is a proven approach, but dependence on hardware-based simulators and the requirement for human instructors to develop and supervise training scenarios raise costs and limit flexibility in delivering training and retraining. We propose to build a distributable intelligent tutoring system (ITS) exploiting a unified representation of human and robotic mission activities that can be used to (1) trace student activity to assess, prompt, and correct their actions, (2) simulate robotic activity, (3) control training scenario generation/selection, (4) cover both general and specific cases, (5) allow for varying degrees of detail in human and robotic activity, (6) support extended scenarios involving multiple procedures, and (7) track detailed re-training requirements resulting from changes in procedures. The innovative merger of general procedure descriptions with specific scenario scripts will facilitate more efficient authoring of consistent broad-coverage automated simulation-based training while retaining the ability to author specific scenarios when needed.

## Primary U.S. Work Locations and Key Partners



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Organizational  
Responsibility**Responsible Mission  
Directorate:**

Space Technology Mission  
Directorate (STMD)

**Lead Center / Facility:**

Johnson Space Center (JSC)

**Responsible Program:**

Small Business Innovation  
Research/Small Business Tech  
Transfer

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Organizations Performing Work	Role	Type	Location
★ Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Stottler Henke Associates, Inc.	Supporting Organization	Industry	San Mateo, California

## Primary U.S. Work Locations

California	Texas
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## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Principal Investigator:**

Eric Domeshek

## Technology Areas

**Primary:**

- TX11 Software, Modeling, Simulation, and Information Processing
  - └ TX11.3 Simulation
    - └ TX11.3.4 Simulation-Based Training and Decision Support Systems